Daily Diary Report by Bid Item

Contract No.: **04-0120F4**
Diary #: **508** **Const Calendar Day:** 896 **Date:** **21-Feb-2012** **Tuesday**
Inspector Name: **Bruce, Matt** **Title:** **Transportation Engineer**
Inspection Type: Intermittent
Shift Hours: 05:00 am 06:00 pm **Break:** 03:00 **Over Time:** 02:00
Federal ID:
Location:
Reviewer: **Schmitt, Alex** **Approved Date:** **Status:** Submit

04-0120F4
04-SF-80-13.2/13.9
Self-Anchored
Suspension Bridge

Weather

Temperature **7 AM** 40 - 50 **12 PM** 50 - 60 **4PM** 50 - 60
Precipitation 0.00" **Condition** Partly Cloudy

Working Day ☐ If no, explain:

Diary: Dispute ☐

Work description.

- John Lyons, Phil Latasa, Sami Dauok, Alex Schmitt and myself checked the out to out distance for the cable strands today as Sami's and my measurements are tabulated below. Sami and I were responsible for both the north/south mainspans and north west-loop today. Similarly John and Phil were responsible for checking the north/south sidespans and the south west-loop. Sami assisted me with the measurements and tabulating the data as I took all of the measurements unless otherwise noted. I used the Maletic gauge (#1) to take the out to out measurements of the cable strands. It should be noted that the previous laser (Transverse Industries) was broken and couldn't be repaired. The new laser is a Black & Decker line leveler. The new laser/modified gauge was calibrated prior to any measurements being taken in the field without any issues, see photos and comments below for more details.

All measurements by both crews were reported to Alex who was stationed in the Caltrans Connex recording and analyzing the data. When all of the measurements were completed, Alex was responsible for reviewing the measurements with ABF engineer Zach Lauria. See Alex's diary for more details related to the acceptance or rejection of cable strand sag adjustment.

Ambient temperatures were taken with the red temperature gauge. Wind speeds were obtained from weather.com at the time of the measurements. The steel temperature measurements were taken with the digital thermometer placed on the outer cable strand wires. As was done Friday the nearest decimal place was read for the ambient and steel temperatures.

The official sunrise time per weather.com for San Francisco today was at 6:52am. The following measurements were taken of the relative sag from cable strand number 1 at the given times below:

// North Mainspan //
Time = 5:12am
Ambient Temperature = 49.9F
Condition = Fog
Wind = E @ 5mph
ABF Surveyor(s) = Terry Denis and Mike Bonidici
Caltrans Engineer(s) = Matt Bruce and Sami Dauok

Cable Strand	Steel Temperature (F)	O-O (#1) CT (mm)	Theor (mm)	CT Delta (mm)
1	48.3	Baseline or Zero	75	0
42	48.0	392, 392 - Ave = 392	404	- 12
43	47.7	451, 451 - Ave = 451	461	- 10
44	47.5	557, 560 - Ave = 559	518	+ 41

45	47.7	617	575	+ 42
46	47.6	224, 226 - Ave = 225	186	+ 39
47	48.1	349	243	+ 106

Comments: All cable strands were considered to be free-hanging at the time of measurement on the north mainspan. I took all of the measurements while Sami assisted me with setting up the targets, being level, normal to cable, etc. I gave my numbers for this span to ABF surveyor Terry Denis. They had not measured these cable strands at this location yet. I told Terry to call me if any of the measurements are off for us or them to remeasure keeping in mind the 7:00am deadline.

// South Mainspan //
Time = 5:38am
Ambient Temperature = 47.8F
Condition = Fog
Wind = ESE @ 3mph
ABF Surveyor(s) = None at this time
Caltrans Engineer(s) = Matt Bruce and Sami Dauok

Cable Strand	Steel Temperature (F)	O-O (#1) CT / ABF (mm)	Theor (mm)	CT Delta (mm)
1	48.1	Baseline or Zero	76	0
42	48.2	410, 410 - Ave = 410 / 412	407	+ 3
43	48.0	457, 457 - Ave = 457 / 457	466	- 9
44	47.7	590, 590 - Ave = 590 / 592	525	+ 65
45	47.2	641 / 642	583	+ 58
46	48.8	200 / 198	180	+ 20
47	48.3	304 / 303	239	+ 65

Comments: All cable strands were considered to be free-hanging at the time of measurement on the south mainspan. I took all of the measurements while Sami assisted me with setting up the targets, being level, normal to cable, etc. The ABF numbers used for comparison were measured by ABF surveyor Terry Denis.

- Sami and myself completed measurements at both the north and south mainspans at 5:53am. All numbers were reported to Alex Schmitt and we proceeded to take measurements at the north west-loop.

// North West-Loop //
Time = 6:07am
Ambient Temperature = 50.0F
Condition = Fog
Wind = NE @ 2mph
ABF Engineer(s) or Surveyor(s) = None at this time
Caltrans Engineer(s) = Matt Bruce and Sami Dauok

Cable Strand	Steel Temperature (F)	O-O (#1Y) CT (mm)	Theor (mm)	CT Delta (mm)
1	50.0	Baseline or Zero	80	0
45	50.4	835 (-126) = 709	717	- 8
46	49.2	161 (-126) = 35	33	+ 2
47	49.2	254 (-126) = 128	127	+ 1
48	49.1	343 (-126) = 217	221	- 4

Comments: All cable strands were considered to be free-hanging at the time of measurement on the north west-loop except for cable strand number 45. Sami took the majority of the shots with me assisting/checking him setting up the targets, being level, normal to cable, etc. I recorded the data while the measurements were being taken. The ( ) denotes that a block was used with the block width or height dimension in millimeters. ABF has now fixed timber blocks to cable strand number 1 at the west-loop, see

photo below for additional comments and details.

- All of the measurements that I took today were conveyed to Alex at 6:25am. At this time deltas were calculated and John, Sami, Phil, and myself waited and were ready to take any remeasurements requested by Alex and Zach.

- Spoke with ESC salesman/surveyor Gary Oschner about the settings on Topsurv related to the local bridge datum calibration. He informed me that the settings should not have changed from the last version of Topsurv on the Topcon GRS-1 data collector.

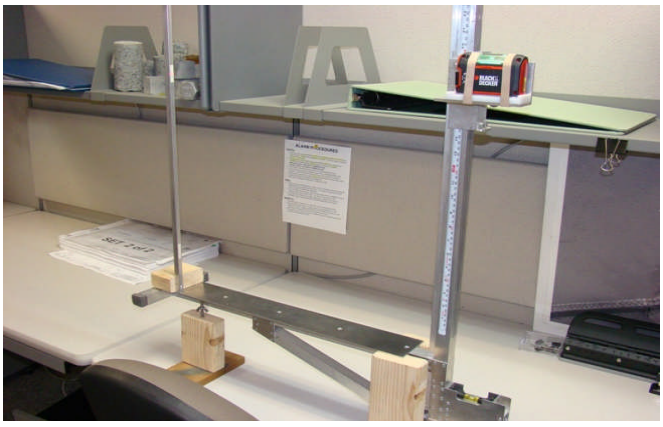
- Calibrated the Topcon GRS-1 GPS equipment using the following control points:
3 (TIN3), 6056, 100 (Receive Reset 1970), WP306, 6203, MB007, and SKY3
The greatest PDOP number observed while calibrating was 1.973 at TIN3. The calibration started at 11:25am and was completed at 1:20pm with an observed K-value of 1 and Max 24hr K-value of 3 during the survey.

- Used the Topcon GRS-1 GPS equipment and automatic level to determine the geometry of the W-Line YBITS bridge prior to placing the counterweight beams at the end of the cantilever. Shot the first three rows of points from the end of the cantilever which include the brass caps placed by ABF surveyors. Thanh Le assisted me (rodman) with measuring the elevations using the automatic level. Surveying with the GPS equipment began at 3:55pm and was completed at 5:40pm. In between the GPS work me and Thanh performed the level run from 4:40pm to 5:05pm where the ambient temperature was 56F and the wind speed was recorded at WNW @ 10mph.

- Emailed the results of the calibration done yesterday ("Cable Strand Gauge Calibration Verification") for the Maletic gauge (#1) with the new Black & Decker laser leveler to pertinent people related to the cable strand adjustment. The new laser and gauge checked out well and is ready for measuring the out to out distance between cable strands.

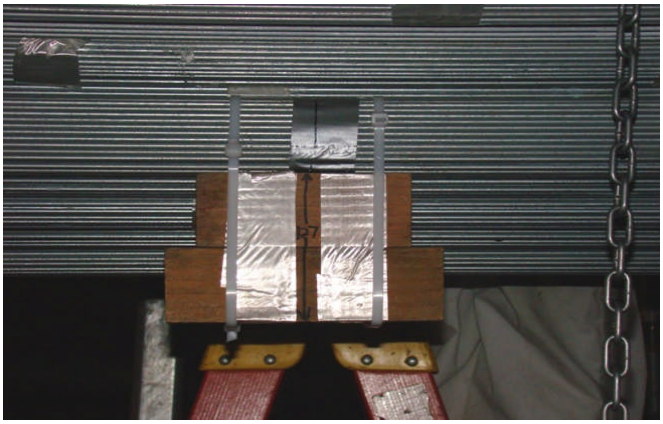
- Worked on compiling my measurements and gave the daily cable strand sag adjustment sheets to Alex.

Attachment

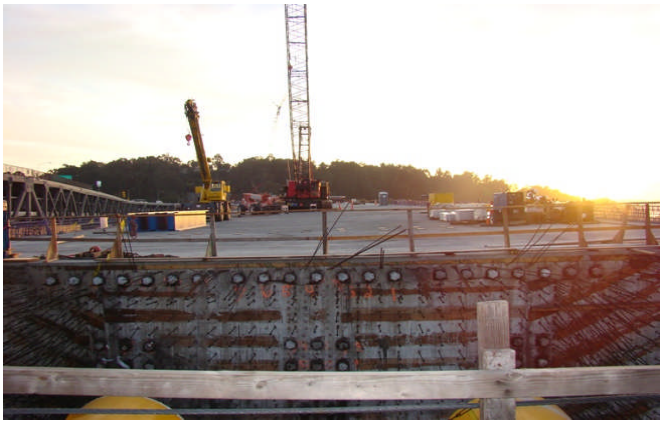


Over view of the calibration for Maletic gauge number 1 with the new Black and Decker laser leveler at 500mm.

Close-up view of the calibration for Maletic gauge number 1 with the new Black and Decker laser leveler at 500mm.



Timber blocks placed by ABF on cable strand number 1 at both the north/south west loops for the out-to-out measurements.



The steel beams were not placed at the end of the YBITS W-Line bridge by the end of my shift at 6:00pm.